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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,808	10/29/2003	Yavor Pachov	0573-1007	.6768

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EXAMINER

PILKINGTON, JAMES

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/694,808	Applicant(s) PACHOV, YAVOR	
	Examiner James Pilkington	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 8 and 17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 14, 2006.

Claim Objections

2. Claims 7 and 9 are objected to because of the following informalities:
 - Clm 7, "adjustinq" in line 3 should be -- adjusting --
 - Clm 9, line 5 reads "in the member 61" should be -- in the tubular member (61) --
 - Clm 9, line 10 reads "to the rod 61" should be -- to the tubular member (61) --

Appropriate correction is required.

3. Claim 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1-7 and 9-16 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re clm 1, the term "slightly" in line 8 of the clm renders the clm indefinite. It is not clear to the examiner to what degree the bore must be larger than the worm to qualify as being "slightly" larger.

Re clm 2, the term "slightly" in line 4 of the clm renders the clm indefinite. It is not clear to the examiner to what degree the bore must be larger than the cylindrical bearing surfaces qualify as being "slightly" larger.

Re clm 3, it is unclear to the examiner what the applicant means by the phrase "in addition to the energy dissipation means constituted by the friction between the teeth of the wheel and the thread of the worm." What is being added to the energy dissipation means? Does the applicant mean that the part of the energy dissipation means is caused by the friction between the teeth of the wheel and the threads of the worm?

Regarding claim 5, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

See MPEP § 2173.05(d).

Claim 5 recites the limitation "the part" in line 5. There is insufficient antecedent basis for this limitation in the claim.

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Regarding claims 6, 7, 12 and 16, the phrase "and/or" renders the claim(s) indefinite because it is not clear if the clm requires both limitations or just one of the limitations.

The term "reduced sections" in claims 6 and 16 is a renders the claim indefinite. The term "reduced sections" is not defined by the claim, or specification and does not provide for one of ordinary skill in the art to understand what the reduced sections are being compared to. What are the reduced sections being compared to, other holes another invention?

Re clm 10, it is not clear to the examiner what the applicant is attempting to clm. The examiner believes the applicant is attempting to clm "a sensor or detector that measures the sliding of the worm and communicates with the means for driving the said one or more rotating members." The examiner suggest rewriting the clm to better disclose what is being claimed.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3 and 11-15, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Clark, Jr. et al, USP 4,625,946.

Clark, Jr. discloses a braking system, intended to be fitted to a mechanism, with one or more rotating members (10) comprising:

- A toothed wheel (26) connected rotationally with respect to at least one rotating member (10, C5/L8-10)
- A worm (30) driven rotationally by a motor (14), the worm (30) being permanently in mesh with the toothed wheel (26), characterized in that the worm (30) is contained in a bore with a diameter slightly larger than that of the worm (30, see Figure 2)
- The worm (30) comprises at least one cylindrical bearing surface (at bearings in Figure 2, near characters 32, 60a and 61a) coaxial with its threaded portion, and said bore has a diameter slightly larger than that of this or these cylindrical bearing surfaces (see Figure 2)
- Specific energy absorption/dissipation means (springs 52, 53 and bumpers 58, 59; C7/L62-65), in addition to the energy dissipation means constituted by the friction between the teeth of the wheel and the thread of the worm (friction is always present between two surfaces)
- Said specific energy absorption/dissipation means comprise friction connecting means between the toothed wheel (26) and its hub or between the toothed wheel (26) and the shaft receiving this wheel (26), freeing the pivoting of this wheel (26) with respect to this hub beyond a certain torque threshold, with friction (friction is present in all areas, and friction is known to be an energy absorbing force)
- Said specific energy absorption/dissipation means comprises a flexible and/or floating mount of the braking system with respect to the frame

which contains it (the springs 52, 53 are floating in the housing and the bumpers 58, 59 are flexible)

- A electronic controller (switch 45) for controlling the speed of the motor (14) for actuating the worm (30) (C5/L61-65) and that the supply to the motor (14) and the control (45) of the speed thereof are performed separately from those of the motor (34) of the mechanism, by means of an electronic controller and a controller having a independent link to the control station of the mechanism, this control station delivering redundant information to the said controller (C5/L8-C6/L18)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4 and 5, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark, Jr. et al '946 in view of Stoll et al, USP 5,834,662.

Clark, Jr. discloses all of the claimed subject matter as described above.

Clark, Jr. does not disclose that the specific energy absorption/dissipation means comprises a sliding mounting of the worm in the bore and the energy absorption/dissipation means are resilient means, such as a spring, interposed between at least one worm and the walls of the part and are actuated upon the sliding of the worm.

Stoll teaches a specific energy absorption/dissipation means comprises a sliding mount of the worm (5, indicated by arrows 17) and the energy absorption/dissipation means are resilient means, such as a spring (spring washers 15), interposed between at least one worm and the walls of the part and are actuated upon the sliding of the worm (see Figure 2) for the purpose of providing a worm gear arrangement for rotary actuation which has a compact, space saving construction and has the capability to take up and transmit extraordinarily high external forces and moments (C1/L64-C2/L2).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Clark, Jr. and provide a specific energy absorption/dissipation means that comprises a sliding mount of the worm and the energy absorption/dissipation means are resilient means, such as a spring, interposed between at least one worm and the walls of the part and are actuated upon the sliding of the worm, as taught by Stoll, for the purpose of providing a worm gear arrangement for rotary actuation which has a compact, space saving construction and has the capability to take up and transmit extraordinarily high external forces and moments.

10. Claims 6, 7 and 16, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark, Jr. et al '946 in view of Stoll et al, USP 5,834,662 and further in view of Niaura et al, USP 6,352,143.

Re clms 6 and 16, Clark, Jr. in view of Stoll discloses all of the claimed subject matter as described above.

Clark, Jr. in view of Stoll does not disclose that the specific energy absorption/dissipation means comprises a liquid contained in the space delimited by at least one piston and one or more conduits and/or interstices for this liquid to escape upon sliding of the worm/piston, this or these conduits and/or interstices having reduced sections suitable for allowing the said liquid to escape only over a non-instantaneous time interval.

Niaura teaches a specific energy absorption/dissipation means that comprises a liquid (hydraulic fluid) contained in the space delimited by at least one piston (7) and one or more conduits and/or interstices (20-23) for this liquid to escape upon sliding of the worm/piston (7), this or these conduits and/or interstices (20-23) having reduced sections (area of opening changes by gates, see Figure 3) suitable for allowing the said liquid to escape only over a non-instantaneous time interval for the purpose of providing a damping system which is able to independently change the magnitude of the damping force during a stroke (C2/L40-45).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Clark, Jr. in view of Stoll and provide a specific energy absorption/dissipation means that comprises a liquid contained in the space delimited by at least one piston and one or more conduits and/or interstices for this liquid to escape upon sliding of the worm/piston, this or these conduits and/or interstices having reduced sections suitable for allowing the said liquid to escape only over a non-instantaneous time interval, as taught by Niaura, for the purpose of providing a damping

system which is able to independently change the magnitude of the damping force during a stroke.

Re clm 7, Niaura discloses that the said one or more conduits (20-23) and/or interstices comprise means for adjusting the flow (gates covering the holes see Figure 2) of the liquid.

11. Claim 10, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Clark, Jr. et al '946 in view of Stoll et al, USP 5,834,662 and further in view of Fernandez et al, USP 5,005,777.

Clark, Jr. in view of Stoll discloses all of the claimed subject matter as described above.

Clark, Jr. in view of Stoll does not disclose a sensor or detector that measures the sliding of the worm and communicates with the means for driving the said one or more rotating members.

Fernandez teaches a sensor or detector (60/62) that measures the sliding of the worm (54) and communicates with the means for driving the said one or more rotating members (electrical coupled to the control circuit 28) for the purpose of providing a means for detecting the movement of the worm and communicating the information to the control circuit (C2/L30-42).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Clark, Jr. in view of Stoll and provide a sensor or detector that measures the sliding of the worm and communicates with the means for

driving the said one or more rotating members, as taught by Fernandez, for the purpose of providing a means for detecting the movement of the worm and communicating the information to the control circuit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is (571) 272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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10/19/06


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